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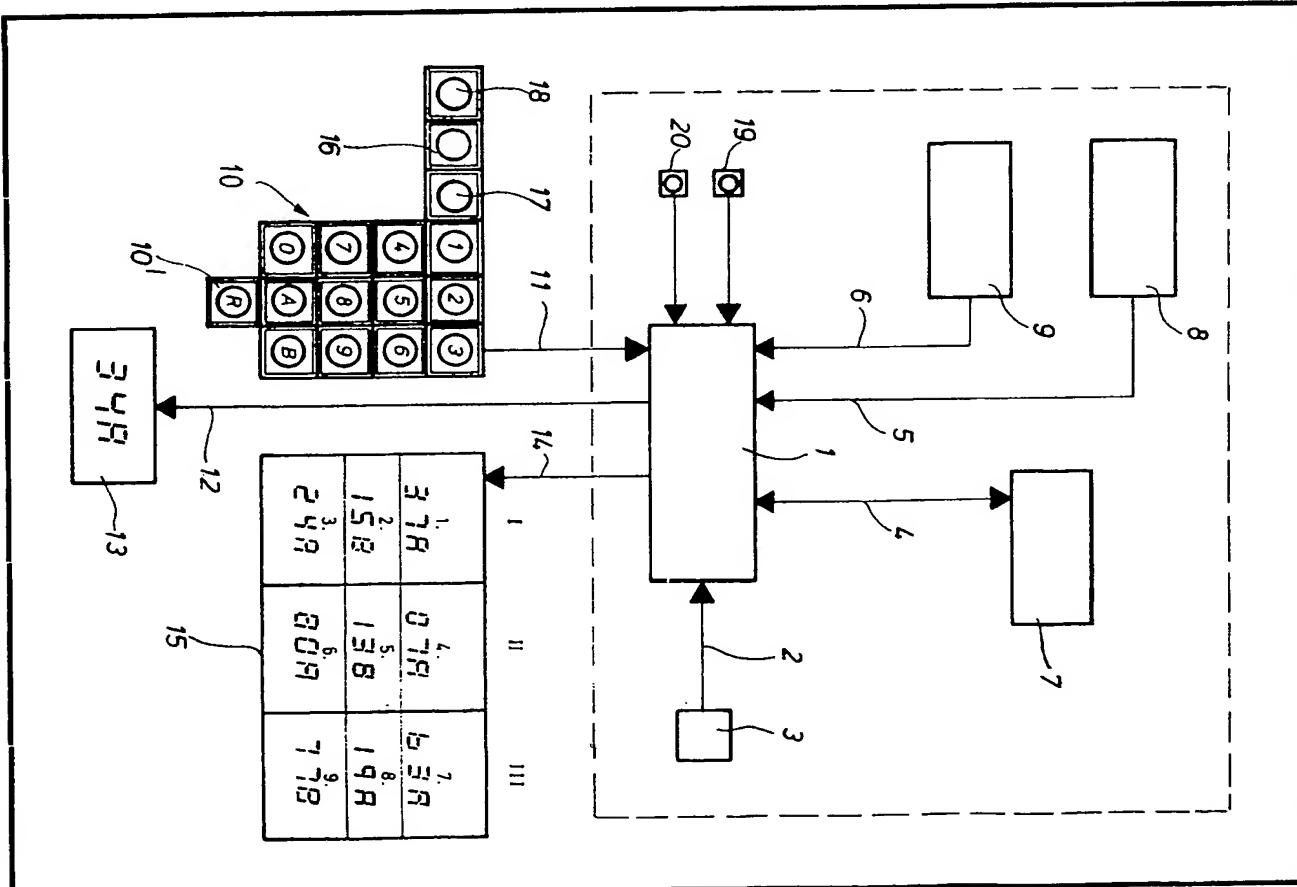
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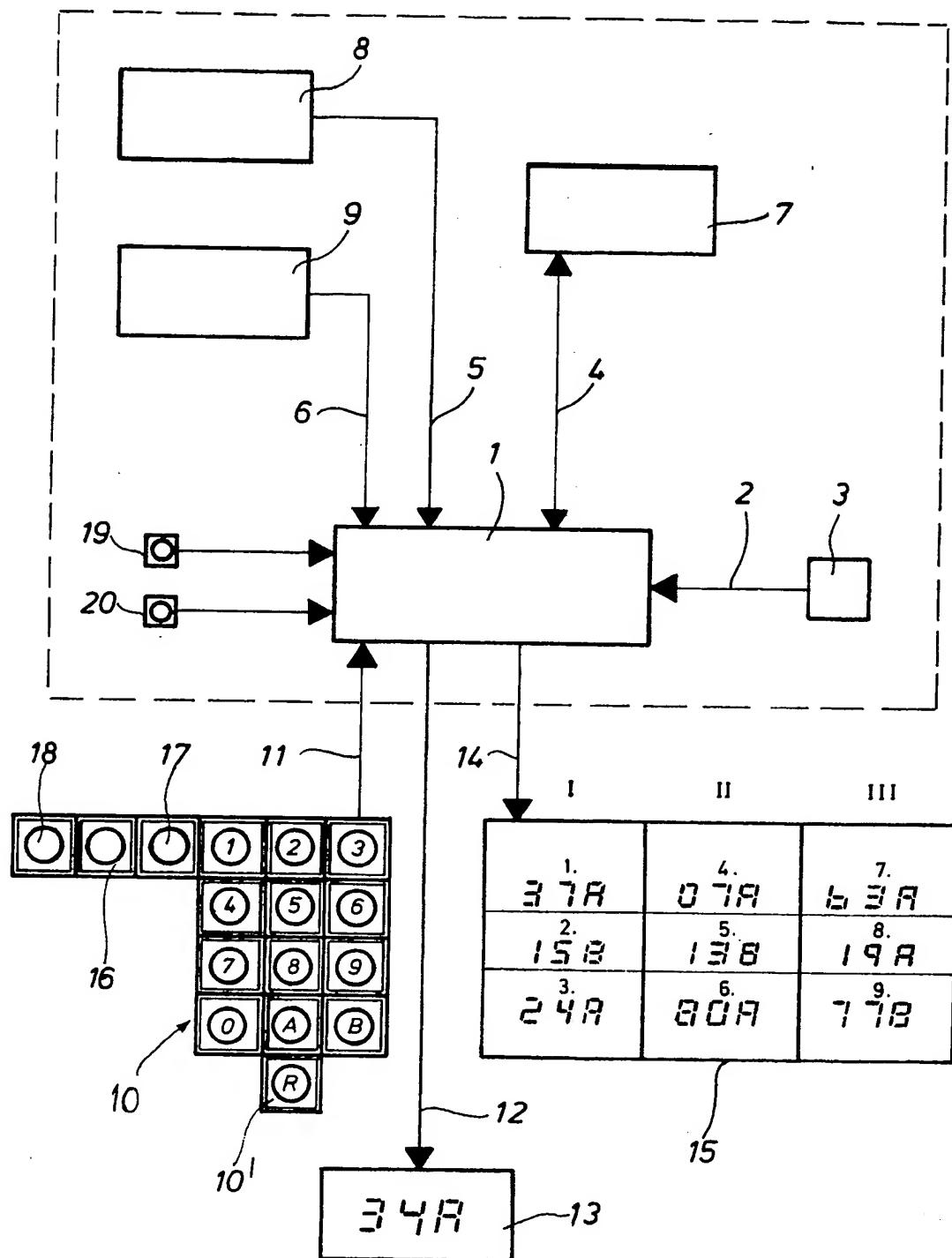
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(54) **Juke box**

(57) A coin-operated juke box incorporating a microprocessor computer (1) and a memory (7) by means of which the frequency of playing of the record sides can be stored and indicated on display (15). The juke box has a selector keyboard (10) enabling selection of individual record sides and additional buttons (16, 17, 18, 10') for enabling display of the locations of the most frequently played record sides and selection for playing of these together or in given groups.



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SPECIFICATION

Coin operated juke box

5 The present invention relates to a coin-operated juke box having a selector keyboard connected to a microprocessor computer for the selection and storage of the addresses of each record side to be played, whereby the
 10 microprocessor computer has a non-volatile memory associated therewith.

Such a juke box is already known from the German Auslegeschrift 2 439 675. Herein, the microprocessor computer is connected
 15 with a 7-segment display which shows which selected record side is just being played, so that juke box users who wish a repeat of the piece of music concerned can find out its title and are able to recognize the address by
 20 means of which the record side in question can be selected. Furthermore, it is already customary to provide juke boxes with devices which are designated as "popularity meters" and which serve the purpose of memorising
 25 the number of playings of each individual record of the record magazine of the juke box. This enables the person installing such a juke box to obtain accurate information as to what
 30 choices available to the public are most frequently requested, and hence he is able to replace unpopular records for others which are more popular and in this manner adapt the selection repertoire in any juke box to the requirements of the particular circle of people
 35 who use the juke box at this particular place of instalment.

The German Offenlegungsschrift 1 922 031 discloses a juke box having a device for indicating the frequency of use of individual
 40 records (popularity meter), the position of which in the record magazine has associated therewith a stepping circuit for the associated indicating device influenced by a displacement member of the corresponding record,
 45 whereby the indicating device is adapted as pointers or strips displaceable mutually parallel.

On account of the purely mechanical structure the indicating devices are not wear-resistant and are hence prone to breakdown.
 50 Moreover, this construction has a disadvantage that after a predetermined time only the frequency of use of the least played records may be read, since in this time the pointers associated with the more popular records have reached their end position.

The object of the invention is to provide a juke box in which, on the one hand, the indication of the most frequently played musical pieces with simultaneously slow proneness to breakdown is simplified, and, on the other hand, the user can select with one choice these most favoured musical pieces together or in groups.

65 According to the present invention there is

provided a coin-operated juke box having a selector keyboard connected to a microprocessor computer for the selection and storage of addresses of every record side to be played,

70 the microprocessor computer having a non-volatile memory associated therewith in which in the facia of the juke box a 7-segment display is provided, coupled with the microprocessor computer, for indicating the record
 75 sides most frequently played, and the overall number or a selectable proportion of these record sides is selectable via a hit selector button associated with the keyboard selector.

Preferably, the addresses of the most frequently played record sides are displayable in the 7-segment display either together constantly or after actuation of a special key associated with the selector keyboard.

To enable the user of a juke box with one
 85 selection to select the latest musical pieces inserted in the juke box together or in predetermined groups, an additional key is preferably provided associated with the selector keyboard by means of which the latest record
 90 sides inserted in the juke box may be selected together or in predetermined groups. Expediently, in this case, the locations of these record sides displayable together or in predetermined groups in the 7-segment display
 95 after actuation of a special key.

To facilitate for the proprietor the replacement of the less popular records a further pushbutton is preferably provided connected with the microprocessor computer and located
 100 in the interior of the housing of the juke box, the actuation of which causes the locations of the least played records to be displayed, in succession, in the 7-segment display. A further pushbutton is preferably provided connected with the microprocessor computer and located within the housing of the juke box,
 105 the actuation of which button can indicate, in the 7-segment display, the playing frequency of the individual records. According to an
 110 alternative embodiment of the invention it is also possible to use, instead of the aforesaid further pushbutton, an additional 7-segment display to show the frequency of playing the records.

115 The advantage obtained with the invention substantially resides in that both the user and the proprietor can immediately see what musical pieces enjoy maximum popularity and that the user, moreover, can select these most favourable musical pieces together or in a predetermined group directly by actuating an individual additional selector button, whereby he is saved the trouble of selecting these musical pieces successively by means of the selector keyboard. Furthermore, on reaching capacity limit of the memory the corresponding memory positions for further counting are blocked and associated code digits are set which quote the sequence of the most popular
 120 record sides, whereby after a long period a

sequential recognition of the most popular musical pieces is ensured.

The invention will be described further, by way of example, with reference to the accompanying drawing, in which a block circuit diagram of a juke box according to the invention is shown.

A microprocessor computer 1 is connected by a lead 2 to a clock generator 3 which provides a basic timing at a frequency specific to the microprocessor computer 1. Furthermore the microprocessor computer 1, constituting the central control of the juke box via suitable leads 4, 5, 6, is connected to a non-volatile memory 7, a motor 8 for playing the individual record sides and a coin feed 9. Via the selector keyboard 10 adapted as a decade keyboard, which is connected via the lead 11 to the microprocessor computer 1, the individual record sides may be selected.

The position of each record, with the title of the record side, has an address associated therewith in the non-volatile memory 7. If a predetermined position is selected, then the associated memory address is incremented by one. The memory addresses together form the popularity meter in which the frequency of selection of individual record sides are retained. In a manner known per se the microprocessor computer 1 is connected via a lead 12 to a 7-segment display 13 which is used to indicate the record side just played. Moreover, the microprocessor computer 1 is connected via a lead 14 to a 7-segment display 15 in which on actuation of a special button 16, associated with the selector keyboard 10, the most frequently played record sides are indicated. These most frequently played record sides may be selected together directly by actuating a Hit selector button 17 associated with the selector keyboard 10. It is, however, also possible to effect selection of groups of the most popular record sides, in which the Hit selection button 17 may be used to select one of the groups I to III of the record side locations shown in the 7-segment display 15.

The selector keyboard 10 may also be used to feed the addresses of records newly inserted in the juke box into the non-volatile memory 7. By means of the special button 10' these addresses can be shown in the 7-segment display 15 and by means of a further special button 18 associated with the selector keyboard 10 the selection may be made together or from groups I to III.

By means of a pushbutton 19 located within the housing of the juke box the microprocessor computer 1 may be requested to show successively, the addresses of the least played records, in the 7-segment display 15. This permits lesser selected records to be replaced in a simple manner. By means of the pushbutton 20 also located in the interior of the housing of the juke box it is possible to indicate in the 7-segment display 15 the

frequency of playing of the individual records.

CLAIMS

1. A coin-operated juke box having a selector keyboard connected to a microprocessor computer for the selection and storage of addresses of every record side to be played, the microprocessor computer having a non-volatile memory associated therewith, in which in the facia of the juke box a 7-segment display is provided, coupled with the microprocessor computer for indicating the record sides most frequently played, and the overall number or a selectable proportion of these record sides is selectable via a Hit selector button associated with the keyboard selector.
2. A coin-operated juke box as claimed in claim 1, in which the locations of the record sides played most frequently are constantly displayable together in the 7-segment display.
3. A coin-operated juke box as claimed in claim 1, in which the locations of the record sides most frequently played, after actuation of a special key associated with the keyboard selector, are displayable in the 7-segment display.
4. A coin-operated juke box as claimed in claim 1, in which the keyboard selector has an additional button associated therewith by means of which the latest record sides inserted in the juke box may be selected as a whole or in groups.
5. A coin-operated juke box as claimed in claim 4, in which the locations of the latest record sides inserted in the juke box are displayable as a whole or in groups in the 7-segment display after actuation of the special key.
6. A coin-operated juke box as claimed in claims 1 to 5, in which within the housing of the juke box a pushbutton, connected to the microprocessor computer, is provided, the actuation of which enables the locations of the least frequently played records to be successively displayable in the 7-segment display.
7. A coin-operated juke box as claimed in claims 1 to 6, in which within the housing of the juke box, a further pushbutton is located, connected to the microprocessor computer, actuation of which permits indication in the 7-segment display of the frequency of play of individual records.
8. A coin-operated juke box substantially as herein described with reference to and as illustrated in the accompanying drawings.

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